CLAIMS

What is claimed is:

1. An isolated polypeptide comprising a sequence of amino acid residues that is at least 90% identical to residues 41 (Gln) to 148 (Ile) as shown in SEQ ID NO:2.

2. An isolated polypeptide comprising a sequence of amino acid residues that is at least 95% identical to residues 41 (Gln) to 148 (Ile) as shown in SEQ ID NO:2.

3. An isolated polypeptide comprising a sequence of amino acid residues that is identical to residues 41 (Gln) to 148 (Ile) as shown in SEQ ID NO:2.

4. The isolated polypeptides of claims (1), (2), or (3), wherein the polypeptide binds the zalpha11 Ligand receptor as shown in SEQ ID NO:115.

5. An isolated polypeptide comprising a sequence of amino acid residues that is at least 90% identical to residues 32 (Gln) to 148 (Ile) as shown in SEQ ID NO:2.

6. An isolated polypeptide comprising a sequence of amino acid residues that is at least 95% identical to residues 32 (Gln) to 162 (Ser) as shown in SEQ ID NO:2.

7. An isolated polypeptide comprising a sequence of amino acid residues as shown in SEQ ID NO:2 from residues 32 (Gln) to 162 (Ser), wherein the polypeptide has an N-terminal Met.

8. A pharmaceutical composition comprising a polypeptide comprising a sequence of amino acid residues that is at least 80% identical to residues 32 (Gln) to 162 (Ser) as shown in SEQ ID NO:2, a pharmaceutically acceptable vehicle.

9. A pharmaceutical composition comprising a polypeptide comprising a sequence of amino acid residues that is at least 90% identical to residues 32 (Gln) to 162 (Ser) as shown in SEQ ID NO:2, a pharmaceutically acceptable vehicle.

10. A pharmaceutical composition comprising a polypeptide comprising a sequence of amino acid residues that is at least 95% identical to residues 32 (Gln) to 162 (Ser) as shown in SEQ ID NO:2, a pharmaceutically acceptable vehicle.

11. A pharmaceutical composition comprising a polypeptide comprising a sequence of amino acid residues from residues 32 (Gln) to 162 (Ser) as shown in SEQ ID NO:2, a pharmaceutically acceptable vehicle.

12. A method of treating cancer in a mammal comprising administering to a mammal in need thereof a therapeutically effective dose of a polypeptide as shown in SEQ ID NO:2 from amino acid residue 32 to residue 162, wherein the treatment results in a clinically significant improvement in the mammal.

13. The method of claim 12, wherein the clinically significant improvement is reduction in time to progression.

14. The method of claim 12, wherein the clinically significant improvement is reduction in the number of metastases.

15. The method of claim 12, wherein the clinically significant improvement is tumor stasis.

16. The method of claim 12, wherein the clinically significant improvement is reduction of measurable disease.

17. The method of claim 12, wherein the cancer is melanoma.

18. The method of claim 12, wherein the cancer is a solid tumor.

19. The method of claim 12, wherein the tumor is a hematopoietic tumor.

20. The method of claim 12, wherein the tumor is lymphoma.

21. The method of claim 12, wherein the tumor is a B cell tumor.

22. A method of stimulating an immune response in a mammal with melanoma comprising administering a therapeutically effective amount of a polypeptide comprising an amino acid sequence as shown in SEQ ID NO:2 from amino acid residue 32 to amino acid residue 162 to the mammal, wherein the stimulation of the immune response results in enhancing an antitumor activity.

23. The method of claim 22, wherein the anti-tumor activity results in a reduction in tumor progression.

24. The method of claim 22, wherein the anti-tumor activity results in a decrease in metastasis.

25. The method of claim 22, wherein the antitumor activity is tumor stasis.

26. The method of claim 22, wherein the antitumor activity is reduction in measurable disease.

27. A method of stimulating an immune response in a mammal with melanoma comprising administering a therapeutically effective amount of a polypeptide comprising an amino acid sequence as shown in SEQ ID NO:2 from amino acid residue 32 to amino acid residue 162 to the mammal, wherein the stimulation of the immune response results in an increased capacity of the immune cells to react with the tumor.

28. The method of claim 27, wherein the stimulated immune response comprises an enhanced activity of NK cells or an expansion of NK cells.

29. The method of claim 27, wherein the stimulated immune response comprises enhanced activity of T cells.

30. The method of claim 27, wherein the T cells are cytotoxic T cells.

31. A method of stimulating an immune response in a mammal bearing a tumor comprising administering a therapeutically effect amount of a polynucleotide encoding a polypeptide comprising an amino acid sequence as shown in SEQ ID NO:2 from amino acid residue 32 to residue 162, wherein the stimulation results enhanced tumor activity.

32. The method of claim 31, wherein the clinically significant improvement is selected from the group consisting of reduction in time to progression, reduction in the number of metastases, and tumor stasis.

33. A method of stimulating an immune response in a mammal bearing a tumor comprising administering a therapeutically effect amount of a polynucleotide encoding a polypeptide comprising an amino acid sequence as shown in SEQ ID NO:2 from amino acid

residue 32 to residue 162, wherein the stimulation of the immune response results in an increased capacity of the immune cells to react with the tumor.

34. The method of claim 33, wherein the stimulated immune response is selected from the group consisting of enhanced activity of NK cells, expansion of NK cells, enhanced activity of T cells, enhanced activity of CTLs, and enhanced activity of B cells.

35. A method of stimulating an immune response in a mammal in need thereof comprising administering a therapeutically effect amount of a polypeptide as shown in SEQ ID NO:2 from amino acid residue 32 to 162, wherein stimulation of the immune response results in clinically significant improvement in the mammal.

36. The method of claim 35, wherein the clinically significant improvement is reduction in measurable disease.

37. A method of stimulating an immune response in a mammal comprising administering a pharmaceutical composition comprising a therapeutically effective amount of an antigen in a pharmaceutically acceptable vehicle and administering a pharmaceutical composition comprising a therapeutic amount of a polypeptide as shown in SEQ ID NO:2 from amino acid residue 32 to residue 162 in a pharmaceutically acceptable vehicle to the mammal.

38. The method of claim 37, wherein administration of the pharmaceutical composition comprising the antigen and the pharmaceutical composition comprising the polypeptide is simultaneous.

39. The method of claim 37, wherein the pharmaceutical composition comprising the antigen comprises a tumor antigen.

40. A method of stimulating an immune response in a mammal comprising administering a pharmaceutical composition comprising a therapeutic amount of an antigen and a therapeutic amount of a polypeptide as shown in SEQ ID NO:2 from amino acid residue 32 (Gln) to residue 162 (Ser) in a pharmaceutically acceptable vehicle.

41. An isolated polynucleotide comprising a sequence of nucleotides that encode amino acid residues that are at least 90% identical to residues 41 (Gln) to 148 (Ile) as

shown in SEQ ID NO:2, wherein the polynucleotide encodes a polypeptide that binds a receptor as shown in SEQ ID NO:115.

42. An isolated polynucleotide comprising a sequence of nucleotides that encode amino acid residues that are at least 95% identical to residues 41 (Gln) to 148 (Ile) as shown in SEQ ID NO:2, wherein the polynucleotide encodes a polypeptide that binds a receptor as shown in SEQ ID NO:115.

43. An isolated polynucleotide comprising a sequence nucleotides encoding amino acid residues that are at least 90% identical to residues 32 (Gln) to 148 (Ile) as shown in SEQ ID NO:2, wherein the polynucleotide encodes a polypeptide that binds a receptor as shown in SEQ ID NO:115.

44. An isolated polynucleotide comprising a sequence nucleotides that encode amino acid residues that are at least 95% identical to residues 32 (Gln) to 148 (Ile) as shown in SEQ ID NO:2, wherein the polynucleotide encodes a polypeptide that binds a receptor as shown in SEQ ID NO:115.

45. A pharmaceutical composition comprising a polynucleotide encoding a polypeptide comprising a sequence of amino acid residues from residues 32 (Gln) to 162 (Ser) as shown in SEQ ID NO:2, in a pharmaceutically acceptable vehicle.

46. An expression vector comprising the following operably linked elements:

(a) a control element; and

(b) a DNA segment comprising a polynucleotide according to claims 45.

47. An isolated polynucleotide molecule comprising at least 10 nucleotides of the polynucleotide sequence as shown in SEQ ID NO:1.